भारतीय मानक **IS 11688 : 2022**

Indian Standard

स्टैन्डर्ड अखबारी कागज — विशिष्टि

(दूसरा पुनरीक्षण)

Standard Newsprint — Specification

(Second Revision)

ICS 85.060

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
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December 2022 **Price Group 6**

Paper and its Products Sectional Committee, CHD 15

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards after the draft finalized by the Paper and its Products Sectional Committee, had been approved by the Chemical Division Council.

This standard was originally published in 1986. However, due to growing concern about cleaner environment, Environment Agencies have globally initiated a worldwide movement to encourage the use of recycled paper especially in manufacture of newsprint. With the advancement of technology in the manufacture of Newsprint and Printing Technology and with an immense desire to conserve the wood, the lower grammage had been specified during first revision in 1999. Tensile index and brightness had been increased, requirement of oil absorbency had been deleted and slight modification in smoothness requirement had also been made during first revision.

In fibre deficient country like India, newsprint is generally made from recycled fibre to achieve all the quality parameters (like brightness, opacity etc.) through environment friendly process, such as deinking technology. This results in lesser load on the environment when compared to traditional process of wood pulping. This process also consumes less water per ton and conserves other precious natural resources.

This revision has taken place to upgrade the parameters to make them at par with international practices and in line with the desire to conserve natural resources to achieve sustainability by encouraging use of environment friendly recyclable fibre in standard newsprint. Further, the requirements have been divided in two grades to meet the requirements of all relevant stakeholders as well as to achieve sustainability.

The composition of technical committee responsible for formulation of this standard is listed in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022, 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

STANDARD NEWSPRINT — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements, methods of sampling and test for standard newsprint intended for use in printing presses for publication of newspapers and periodicals.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard the terms described in IS 4661 (Part 1 to 5) and following shall apply:

3.1 Standard Newsprint

A generic term used to describe paper of the type generally used in thepublication of newspapers and magazines. Standard Newsprint paper should consist of not less than 50 percent by weight of the total fibre content consisting of wood fibres obtained by a mechanical or chemi-mechanical process. The standard newsprint is machinefinished and either un-sized or slack sized and may contain inherent ash or mineral loading maximum up to 12 percent for improved printability.

4 MATERIAL

The standard newsprint paper may preferably be manufactured from chemical/semi-chemical/mechanical and/or recycled pulp in order to comply the requirements prescribed in this standard.

5 GRADES

The standard newsprint shall be of the following two grades:

a) Grade 1

b) Grade 2

6 REQUIREMENTS

6.1 Standard newsprint shall be free from shives, specks, stickies, gums, pin holes, slime spots and holes, stock lumps, wrinkles, bundles and calender cuts.

6.2 The grammage for standard newsprint shall be 40 - 52 g/m^2. No single test result, of the selected test pieces, shall vary by more than ± 4 percent from the nominal grammage. Further, the mean of test results, of the selected test pieces, shall not vary from the nominal grammage by more than ± 2.5 percent.

The grammage shall be determined as per the method prescribed in IS 1060 (Part 5/Sec 5). The nominal grammage shall be as agreed between the purchaser and the supplier with the agreed value lying within the ranges specified above.

6.3 The thickness of standard newsprint shall be between 56 and 90 µm. A tolerance of ± 4 percent shall be permitted on the nominal thickness, when tested according to IS 1060 (Part 5/Sec 3). The nominal thickness shall be as agreed between the purchaser and the supplier with the agreed value lying within the ranges specified above.

6.4 The standard newsprint shall be supplied in reel form.

6.4.1 The width of the reels shall be any of the sizes specified in IS 1064. The minimum diameterof the reel shall be 800 mm or as agreed between purchaser and supplier. The permissible tolerance on the width of the reels shall be in accordance with **4** of IS 1064.

6.4.2 The nominal mass in kg per reel including the mass of the core, plugs and wrappers shall be as agreed between the purchaser and the supplier. A tolerance of ± 2.5 percent or as agreed between the purchaser and supplier shall be allowed on the nominal mass of the reel. Nominal mass of the reel shall be determined in accordance with the method prescribed in Annex B.

6.5 In addition to the above requirements, the standard newsprint shall also comply with the requirements given in Table 1, when tested in accordance with the relevant test methods prescribedin col 5 of Table 1.

6.6 The colour/shade of the standard newsprint shall be agreed between the interested parties according to IS 15963 (Part 3).

7 PACKING AND MARKING

7.1 Packing

7.1.1 The packing of standard newsprint reel shall be done in accordance with clause **4** of IS 6211.

7.1.2 The standard newsprint reel shall be tightly wound with uniform and even tension and shall not contain more than the specified maximum number of splices per roll. Splices shall be neatly and securely pasted with adhesives, which will not permit the splices to separate while passing through the drying oven maintained at 370 °C. The adhesive used shall not cause the splice to adhere to adjacent laps. The maximum number of splices allowed in a reel shall be as per agreement between purchaser and supplier.

Table 1 Requirements for Standard Newsprint
(*Clauses* 5.5, 8.3 and 9.3)

Sl No.	Characteristics	Requirement		Method of Test
		Grade 1	Grade 2	
(1)	(2)	(3)	(4)	(5)
i)	Brightness ISO, percent, *Min*	55	52	IS 1060 (Part 4/Sec 13)
ii)	Opacity, percent, *Min*	90	90	IS/ISO 2471
iii)	Smoothness (Bendsten), ml/min, *Max*			
	Top side	200	250	IS 1060 (Part 5/Sec 20)
	Wire Side	250	300	
iv)	Porosity, ml/min, *Max*	500	700	IS 11080
v)	Tensile index, N.m/g, *Min*			
	CD	18	16	IS 1060 (Part 5 /Sec 6)
	MD	46	37	
vi)	Tearing Index, CD, mN.m^2/g, *Min*	5.0	4.5	IS 1060 (Part 6 /Sec 1)

7.2 Marking

Each package shall be marked with the following particulars :

a) Description, grammage in g/m^2, thickness in µm of the paper;

b) The width and diameter of the reel;

c) Lot number;

d) Month and year of manufacture;

e) Manufacturer's name or his recognized trademark, if any; and

f) Any other making details as desired by buyer.

7.2.1 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian standard Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

8 SCALE OF SAMPLING

8.1 Lot

All the reels in a consignment and belonging to the same batch of manufacturing shall constitute a lot.

8.2 Unless otherwise agreed to between the purchaser and supplier, the number of reels to be selected shall depend upon the size of the lot and shall be in accordance with the Table 2.

Table 2 Number of Reels to be Selected from a Lot

(*Clause* 7.2)

Sl. No. (1)	Lot Size (2)	Sample Size (3)
i)	Up to 50	3
ii)	101 to 150	4
iii)	151 to 300	7
iv)	301 to 500	10
v)	501 and above	15

9 NUMBER OF TESTS

9.1 For defects as given in 5.1, inspect in 5 different layers in the area along the full width of the reel and 300 cm in length.

9.2 For grammage and thickness, take 10 layers from different reels, taking equal number of layers from each reel as far as possible. When the number of reels is more than 10, take 10 reels at random and select one layer from each reel. For selection of layers, the methods given in IS 1060 (Part 1) maybe followed.

9.3 For all other characteristics given in Table 1, each reel shall be tested individually.

10 CRITERIA FOR CONFORMITY

10.1 For visual examination, the number of defective layers shall not be more than 2.

10.2 For grammage and thickness, the average of 10 results shall be within the limit given in **5.2** and **5.3.**

10.3 For all other characteristics on which individual tests have been done average (X) and range (R) shall be calculated, range being the difference between the maximum and minimum of the test results and

$$\text{Average} = \frac{\textit{Sum of the test result}}{\text{Number of test}}$$

The lot shall be declared as conforming to the specification with respect to the characteristics given in Table 1, if the expression;

$$X - 0.6\,R > \text{minimum value specified, and}$$

$$X + 0.6\,R < \text{maximum value specified.}$$

In case the numbers of test results are more than 10, it shall be divided into sub-groups of 5 test results each, taking them as obtained and for each sub-group, range shall be calculated. The mean range (R) shall be calculated by dividing the sum of the ranges by the number of sub-groups and in the expression $X - 0.6\,R$ and $X + 0.6\,R$, R shall be replaced by R.

ANNEX A

LIST OF REFERRED INDIAN STANDARDS

(*Clause* 2)

IS No.	*Title*
IS 1060 (Part 1) : 2022	Methods of sampling and test for paper and allied products: Part 1 Test Methods for general purpose
IS 1060 (Part 4/Sec 13) : 2020	Methods of sampling and test for paper and allied products: Part 4 Methods of test for paper, board and pulps, Section 13 Measurement of diffuse blue reflectance factor — Indoor daylight conditions (ISO Brightness)
IS 1060 (Part 5/Sec 3) : 2014 ISO 534 : 2011	Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Section 3 Determination of thickness density and specific volume
IS 1060 (Part 5/Sec 5) : 2021 ISO 536 : 2019	Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Section 5 Determination of grammage
IS 1060 (Part 5/Sec 6) : 2014 ISO 1924-2 : 2008	Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Section 6 Determination of tensile properties — Constant rate of elongation method 20 mm min
IS 1060 (Part 5/Sec 20) : 2018 ISO 8791-2 : 2013	Methods of sampling and test for paper and allied products: Part 5 Methods of test for paper and board, Section 20 Determination of roughness/smoothness (Air Leak Methods) — Bendtsen method
IS 1060 (Part 6/Sec 1) : 2014 ISO 1974 : 2012	Methods of sampling and test for paper and allied products: Part 6 Methods of test for paper, Section 1 Determination of tearing resistance — Elmendorf method
IS 1064 : 1980	Paper sizes (*second revision*)
IS/ISO 2471 : 2008	Paper and board determination of opacity paper backing diffuse reflectance method
IS 4661	Paper board pulps and related terms vocabulary:
(Part 1) : 2022	Alphabetical index
(Part 2)	Pulping terminology
(Part 3)	Paper making terminology
(Part 4)	Paper and board grades and converted products
(Part 5)	Properties of pulp paper and board
IS 11080 : 1984	Method for determination of porosity of paper
IS 15963 (Part 3) : 2015	Graphic technology — Process control for the production of half-tone colour separations, proofs and production prints: Part 3 Coldset offset lithography on newsprint

ANNEX B

(*Clause* 5.4.2)

DETERMINATION OF NOMINAL MASS OF REEL

The nominal mass of reel (M) of standard newsprint shall be calculated according to the following formula :

$$M = \frac{(G \times W \times L) + K}{1\ 000}$$

where

M = Nominal mass of reel of newsprint in kg,

G = Nominal grammage of newsprint in g/m^2,

W = Width of reel in m,

L = Length of web of newsprint in the reel in m, and

K = Mass of the core, plugs and wrappers in g.

ANNEX C

(*Forward*)

COMMITTEE COMPOSITION

Paper and its Products Sectional Committee, CHD 15

Organization	*Representative(s)*
Central Pulp & Paper Research Institute, Saharanpur	Dr M. K. Gupta **(*Chairperson*)**
Avantha Centre for Industrial Res. & Development, Yamuna Nagar	Dr Nishikant Bhardwaj
Ballarpur Industries Ltd, New Delhi	Shri Deepak Sharma Shri Bhushan Awate (*Alternate*)
Century Pulp and Paper Mills, Distt. Nainital	Shri Sanjay Kumar Yadav Shri Sunesh Yadav (*Alternate*)
Central Pulp & Paper Research Institute, Saharanpur	Dr A. K. Dixit Dr Sanjay Tyagi (*Alternate* I) Shri Alok Kumar Goel (*Alternate* II)
Directorate of Printing, Min. of Urban Development, New Delhi	Fresh nomination awaited
DPIIT, Min. of Commerce & Industry, New Delhi	Fresh nomination awaited
Federation of Indian Agro Paper Mills	Nomination Awaited
Federation of Paper Traders Association of India, Mumbai	Shri Dalip Bindal Shri Piyush Jain (*Alternate*)
Government printing, West Bengal	Shri Subir Kumar Mandal
Gujarat Paper Mills Association	Shri Prabhat Ranjan Shri Kanu Mehra (*Alternate*)
Indian Agro and Recycled Paper Mills Association, New Delhi	Dr B. P. Thapliyal Dr Anil Naithani (*Alternate*)
Indian Institute of Packaging, Mumbai	Dr Tanweer Alam Dr Madhab Chakraborty (*Alternate*)
Indian Institute of Technology, Roorkee	Dr Dharm Dutt Dr Vibhore Kumar Rastogi (*Alternate* I) Dr Kirtiraj K. Gaikwad (*Alternate* II)
Indian Newsprint Manufacturers Association, New Delhi	Shri Vijay Kumar Shri Ashish A. Gupta (*Alternate* I) Shri K. Rajkumar (*Alternate* II)
Indian Paper Manufacturers Association, New Delhi	Shri Biswaranjan Dash Shri Rohit Pandit (*Alternate*)
Indian Recycled Paper Mills Association, New Delhi	Shri R.C. Rastogi
JK Paper Ltd, New Delhi	Shri Mahesh Narayan Bhat
Kumarrappa National Handmade Paper Institute, Jaipur	Ms Saakshy
Ministry of Railways, Railway Board, New Delhi	Shri C. Ravindran
NCERT, New Delhi	Shri Arun Chitkara

Pulp and Paper Research Institute, Jaykaypur, Orissa	Shri S. K. Pradhan Dr S. P. Singh (*Alternate*)
Seshasayee Paper & Boards Limited, Erode	Shri A. K. Mehrotra Dr P. Marimuthu (*Alternate*)
Shree Mangal (Trade) Enterprises	Shri Narottam Vyas Ms Bhawna Vyas (*Alternate*)
Stationery Office, Govt. of India, Kolkata	Shri Jalis Ahmed Shri Swapan Kanti Ghosh (*Alternate*)
Tamilnadu Newsprint and Papers Ltd, Tamilnadu	Shri P. Sankaralingam Shri N. K. Periasamy (*Alternate*)
Voluntary Organization in Interest of Consumer Education, New Delhi	Shri M. A. U. Khan Shri H. Wadhwa (*Alternate*)
Whale Stationery Products Ltd, New Delhi	Shri Mukesh Gupta Shri Gaurav Goel (*Alternate*)
BIS Directorate General	Shri A. K. Lal, Scientist E and Head (Paper and its Products) [Representing Director General (*Ex-officio*)]

Member Secretary
Shrishti Dixit
Scientist D/Joint Director
(Paper and its Products), BIS

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Amend No.	Date of Issue	Text Affected

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